

THE SCYPHOMEDUSÆ OF THE SOUTHERN
HEMISPHERE.

BY R. VON LENDENFELD, PH.D.

PART II.

III. ORDO.—CUBOMEDUSÆ.

Haeckel, System der Medusen. Seite, 423, 1879.

Charydeidæ. Gegenbaur, 1856.

Marsupialidæ. Agassiz, 1862.

Conomedusæ. Haeckel, 1878.

Lobophora. Claus, 1878.

Acraspede with 4 perradial marginal bodies, which contain an acoustic club, with Entodermal Otolithe sack, and one or more eyes; 4 interradial tentacles or tentacle clusters. Gastral cavity with four wide perradial square pouches. Gonads four pair leaf-shaped bulges, which are fixed by their margin to the four interradial septa. They are developed from the Sub-umbral Entoderm of the pouches of the stomach. And they project free into their cavity.

Family. *Charybdeidae*. Gegenbaur, 1856.

Cubomedusæ with 4 simple interradial tentacles, and 4 perradial marginal bodies, without any marginal flaps in the velarium, but with 8 marginal pouches, without arms in the 4 radial pouches.

Genus. *Procharybdis*. Haeckel, 1879.

Charydeidæ with 4 simple interradial tentacles with Pedalia, simple velarium without velar-canals and without Frenula.

Species. *Procharybdis tetraptera*.

Haeckel, System der Medusen. Seite, 437.

Tafel, XXV. Figuren, 3, 4.

Umbrella nearly oval, $1\frac{1}{2}$ times as high as broad, vertex flat; the 4 side surfaces strongly curved. Gastral cavity flat with 4 large oval mouth flaps. In the interradial elongated corners of the base of the Gastral cavity there are 4 pairs of wing-shaped Phacellæ, every one hand-shaped and split in 20—30 filaments. Margin of the Umbrella with 8 flat adradial gallert-flaps. Velarium simple, narrow, continuous. The distance of the niches of the sense organs from the margin of the Umbrella is about the same as that of the Pedalbase. Four Pedalia very large, about as long as the height of the Umbrella; leaf-shaped, with 2 large wings. The Abaxial wing reaches nearly to the middle of the interradial margin of the Umbrella. The Axial wing is very narrow above, and very broad and deeply cut out below. Four tentacles are higher than the height of the Umbrella.

Size: Breadth of Umbrella, 20 mm. Height of Umbrella, 30 mm.

Locality: Indian Ocean; Sunda, Archipel. Rabbe.

Species. *Procharybdis flagellata*.

Haeckel, System der Medusen. Seite, 438.

(?) *Marsupialis flagellata*, Lesson, 1843, Acalèphes, p. 278. Umbrella conic, stubbed above. The height twice the width; 4 side surfaces strongly curved. The 4 interradial sides rounded and a little projecting. Gastral cavity? Margin of Umbrella continuous with 8 laps. Velarium simple, narrow, continuous. The distance of the niches of the sense organs to the margin of the Umbrella is about half the distance of the pedal base. 4 Pedalia lancet shaped and half as long as the height of the Umbrella, with very narrow wings. Tentacles several times as long as the height of the Umbrella.

Size: Breadth of Umbrella, 20 mm. Height of Umbrella, 40 mm.; Ontogenesis unknown.

Locality: North Coast of Australia: Torres Straits. Weber (New Guinea. Lesson ?)

Species. *Procharybdis cuboides*.

Haeckel, System der Medusen. Seite, 439.

Umbrella nearly cubic, stubbed above, the same height as breadth. Gastral cavity square, quite flat with 4 short mouth flaps. 4 Phacelles bipartite, with very short and numerous Gastral filaments. Twice as broad as their interval. Margin of Umbrella hardly flapped. The distance of the niches of the sense organs to the margin of the Umbrella about half the distance of the pedal base. Velarium pretty broad, quite simple, plaited. Pedalia nearly lancet-shaped, broadest in the middle, with two narrow wings, half the height of the Umbrella. Tentacles about as long, swollen to a roundish knob at the end.

Size: Breadth of Umbrella, 35 mm. Height of Umbrella, 35 mm. Ontogenesis unknown.

Locality: Tropic Zone of the Pacific Ocean; Sandwich Islands. Ballier.

Species. *Procharybdis securigera*.

Haeckel, System der Medusen. Seite, 640.

Umbrella nearly cubic, stubbed above, as high as broad. Gastral cavity quadrate, flat, with 7 triangular mouth flaps, 4 pair wing-shaped Phacellæ, every one split in 10—20 filaments. Margin of Umbrella slightly 8 flapped. The distance of the niches of the sense organs from the margin of the Umbrella is the same as their distance from the pedal base. 4 Pedalia axe-shaped, half as long as the height of the umbrella. 4 Tentacles which are longer than the height of the Umbrella swollen at the base to a roundish knob.

Size: Breadth of Umbrella, 40 mm. Height of Umbrella, 40 mm.

Locality: Pacific Coast of Central America. Fuchs.

Genus. *Charybdea*. Péron et Leseur.

Charybdeide with 4 simple interradial tentacles, with Pedalia, suspended velarium (velar-canals with 4 perradial Frenula). Gastral cavity flat and low, without broad mesenteria. 4 horizontal groups of filaments, single or double, fascicular or pencil-shaped, only on the interradial corners of the fundus.

Species. *Charybdea alata*. Reynaud.

Haeckel, System der Medusen. Seite, 441.

Charybdea alata. Reynaud, 1830. Lesson's Centurie Zoologique, p. 95. Pl. 33. Fig. 1.

Marsupialis alata. Lesson, 1843. *Acalèphes*, p. 278.

Tamoya alata. L. Agassiz, 1862. Monogr. Acal. Contrib., IV., p. 174.

Umbrella conic, about as high as broad. Gastral cavity very small, scarcely half as broad as the Umbrella-radius. Gastral cavity simple. Four Phacellæ simple pencil-shaped, scarcely half as broad as their interstices. The distance of the niches of the sense organs from the margin of the Umbrella is $\frac{1}{3}$ as great as their distance from the pedal base. Velarium narrow in every quadrant with 6 simple velar canals. Pedalia lancet-shaped, nearly as long as the Umbrella is high, with rather broad wings.

Colour: Gastral cavity blue, according to Reynaud.

Size: Breadth of Umbrella, 30 mm.; height of Umbrella, 33 mm; Ontogenesis unknown.

Locality: South Atlantic Ocean, Reynaud, South Africa. W. Bleek.

Genus. *Tamoya*. Fritz Müller, 1859.

Charybdeide, with 4 simple interradial tentacles, pedalia, suspended velarium, (with velar-canals and 4 perradial Frenula.) Gastral cavity large and deep, connected with the Sub-umbrella, by 4 broad perradial mesenteria. Four filament groups of vertical rows of threads, or brush-shaped bands which represent the interradial middle-lines of the sides of the Gastral cavity.

Species. *Tamoya haplonema*. Fritz Müller, 1859.

Haeckel, System der Medusen, Seite, 443, 1879.

Tamoya haplonema, Fritz Müller, 1859; Abhandl. Naturf. Ges. Halle. Bat. V., p. 1., Taf. I. II.

Tamoya haplonema, L. Agassiz, 1862; Monogr. Acal. Contrib. IV., p. 174.

Umbrella nearly quadrangular-prismatic, stubbed at the top, more than $\frac{1}{3}$ as high as it is broad. Gastral cavity nearly globular, occupying the upper half of the Sub-umbrella-cavity. Twice as high as the infundibuliform mouth-tube, which is split below into 4 short triangular mouth-flaps; 4 Phacellæ simple interradial rows of thread, which pass through the upper $\frac{2}{3}$ of the Gastral side of the cavity. Velarium broad, with numerous dendritic ramified canals. Pedalia in the form of clubs, twice as long as broad, about $\frac{1}{3}$ as long as the height of the Umbrella, spreading towards the base, two winged with broad meridial-wings.

Size: Breadth of Umbrella, 120 mm. Height, 150 mm; Ontogenesis unknown.

Locality: Coast of Brazil, Desterro, Santo Catharina. Fritz-Müller.

Species: *Tamoya bursariae*. Haeckel.

Haeckel, System der Medusen. Seite, 444, 1879.

Bursarius cythereæ, Lesson, 1829; Voyage de la Coquille, Zoophytes, p. 108, pl. XIV., fig. 1.

Bursarius cythereæ, L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 174.

Umbrella semi-spherical, the upper third curved, the other thirds cubic, $1\frac{1}{2}$ as high as broad. The semi-spherical cupola and the 9 quadratic side-surfaces are papillous, sprinkled with large nettle-knobs. The 4 corner pillars, half as broad as the side-surfaces, are divided into two parts by a deep furrow, and longitudinally finely ribbed. Margin of Umbrella only slightly thickened, divided into many triangular prismatic ridges by deep cuttings. From which 6—8 are on each of the 4 side-surfaces.

Pedalia oval, three-cornered, $1\frac{1}{2}$ as long as the sub-umbrella cavity, the dorsal margin wing-shaped, rising from the margin of the Umbrella.

Size: Breadth of Umbrella, 70 mm.; height of Umbrella, 100 mm.; Ontogenesis unknown.

Locality: New Guinea, Rawack, Waigion. Lesson.

Species. *Tamoya gargantua*. Haeckel.

Haeckel, System der Medusen. Seite, 444.

Beroe gargantua, Lesson, 1829; Voyage de la Coquille, Zoophytes, p. 261, pl. XV., fig. 1.

Epomis gargantua, Lesson, 1843, Acaléphes, p. 262.

Umbrella quadrangular-pyramidal, twice as high as broad. Diameter of the opening of the Umbrella 3 times as large as that of the stubbed summit. Exumbrella with 16 deep longitudinal furrows, by which 16 convex divisions of nearly the same breadth are formed. Gastral cavity nearly globular, occupying the upper third of the Sub-umbrella cavity, 4 Phacellæ, simple interradial rows of threads along the sides of the Gastral cavity. Velarium broad, with numerous, dense slightly branched canals. Pedalia nearly sickle-shaped, with broad convex abaxial wings, narrow concave abaxial-wings, $\frac{1}{4}$ as long as the Sub-umbrella cavity.

Size: Breadth of Umbrella 80-100 mm.; height, 200 mm.
Ontogenesis unknown.

Locality: Tropical part of the Pacific Ocean, Tahiti, Lesson, Samoa, Weber.

Family. *Chiropodidae*. Haeckel, 1879.

Cubomedusæ, with 4 interradial tentacle-bundles and 4 perradial marginal bodies; with 16 marginal pouches in the marginal flaps of the velarium and 8 umbral arms in the 4 radial-pouches.

Genus. *Chiropsalmus*. L. Agassiz, 1862.

Chiropodidae, with 8 simple finger-shaped pouch-arms on the Umbrella-wall of the 4 radial-pouches, with 4 hand-shaped Pedalia, which possess numerous tentacles, and with 8 leaf-shaped Gonads.

Species. *Chiropsalmus zygonema*. Haeckel.

Haeckel, System der Medusen. Seite, 641.

Umbrella quadrangular pyramidal, stubbed above, $1\frac{1}{2}$ times as high as broad, with the suspended velarium. Mouth-tube small, with 4 flaps, half as long as the roundish Gastral-

pouch, the side-walls have 4 interradial arched Phacellæ. The two pouch-arms oval and very small; 4 Pedalia leaf-shaped, two-edged, not symmetrical, about $\frac{1}{3}$ as long as the height of the Umbrella, every one with 2 short gallert-processes. Altogether 8 tentacles.

Size: Breadth of the Umbrella, 40 mm.; height of Umbrella, 60 mm.

Locality: South Atlantic Ocean. Smith.

Species. *Chiropsalmus quadrumanus*. L. Agassiz.

Haeckel, System der Medusen. Seite, 447.

Chiropsalmus quadrumanus, L. Agassiz, 1862; Monogr. Acal. Contrib. IV., p. 174.

Tamoya quadrumana, Fritz Müller, 1859; Abhandl. Naturf. Ges. Halle. p. 1., Tef. I.

Umbrella bell-shaped, nearly semi-spherical, together with the suspended velarium scarcely as high as broad. Mouth-tube large, quadrangular pyramidal, split into 4 strong triangular mouth-flaps, higher than the nearly globular gastral pouch, which contains 4 interradial crooked arched rows of Gastral filaments. Two pouch-arms on the umbral-wall of each radial-pouch, near their entrance, very large, fingershaped, simple and more than half as long as the pouch itself. Four Pedalia hand-shaped, not symmetrical, nearly as long as the height of the Umbrella, every one with 10 narrow gallert-processes. Altogether 40 long tentacles.

Size: Breadth of the Umbrella, 120 mm.; Height of the Umbrella, 130 mm. Ontogenesis unknown.

Locality: Coast of Brazil, Desterro Island, S. Catharina. Fritz Müller.

Genus. *Chirodropsus*. Haeckel.

Chiropodidae, with 8 quadripartite, half feathered pouch-arms on the umbral-wall of the 4 radial-pouches, with 4 hand-shaped Pedalia, which possess numerous tentacles, and with 8 grape-like Gonads.

Species. *Chirodropsus palmatus*. Haeckel.

Haeckel, System der Medusen. Seite. 448.

Umbrella quadrilateral-prismatic, vaulted above like a bell, with the suspended velarium $1\frac{1}{2}$ times as high as broad. Margins strongly projecting, sides flat. Mouth-tube with 4 flaps, scarcely half the height of the oval Gastral pouch. Both pouch arms on the umbral-wall of each radial-pouch are aduate in their two upper thirds, and are only free in the lower part and split into a great many filaments. Four Pedalia hand-shaped, not symmetrical, very large, nearly as long as the height of the Umbrella, each with 21 long and broad band-shaped gallert-processes. Altogether 84 long tentacles.

Size: Breadth of Umbrella, 70 mm.; height of Umbrella 100 mm. Ontogenesis unknown.

Locality: South Atlantic Ocean, not far from the Island St. Helen. Levasseur.

Species. *Chirodropsus gorilla*. Haeckel.

Haeckel, System der Medusen, 448.

Umbrella bell-shaped, nearly semi-spherical. Together with the suspended velarium $1\frac{1}{2}$ times as high as broad, margin slightly projecting, side curved. Mouth-tube quadrilateral-pyramidal nearly as high as the globular gastral-pouch. Both pouch-arms on the umbral-wall of the radial-pouches are adnate in their upper third, in the lower part they hang freely in the pouch, and are split into numerous filaments. Four Pedalia hand-shaped, not symmetrical scarcely as high as the height of the Umbrella, each with 9 long narrow gallert-processes.

Altogether 36 tentacles.

Size: Breadth of Umbrella, 120 mm.; height, 150 mm. Ontogenesis unknown.

Locality: Coast of New Guinea, Chinchozo Loango. Falkenstein.